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SOME CORRELATES OF NAVAL PROMOTIONAL VIABILITY

Ronald Lawrence Lassiter

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THESIS

SOME CORRELATES OF
NAVAL PROMOTIONAL VIABILITY

by

Ronald Lawrence Lassiter

June 1975

Thesis Advisor: Richard S. Elster

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T167962

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Some Correlates of Naval Promotional Viability		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis June 1975 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Ronald Lawrence Lassiter		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		12. REPORT DATE June 1975 13. NUMBER OF PAGES 37
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) Naval Postgraduate School Monterey, California 93940		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Promotional Viability, Navy
Correlates of Promotional Sucess

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

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S/N 0102-014-6601 |
(Page 1)

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Some Correlates of Naval Promotional Viability

by

Ronald Lawrence Lassiter
Lieutenant Commander, United States Navy
B.S., United States Naval Academy, 1966

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL

June 1975

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL

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This thesis focused on attempting to predict the promotional histories of one hundred randomly selected U. S. Naval Academy graduates who were commissioned in the U. S. Navy in 1950.

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I. INTRODUCTION

This is a thesis concerned with predicting success in the U. S. Navy. The prediction of individual success in an occupation is always an interesting endeavor. In some cultures, success is a function of nepotism. In the United States, however, many or most organizations and individuals believe in success through performance and accomplishment. As a consequence, large organizations develop elaborate systems for deciding whom to promote and otherwise reward. This thesis will focus on attempting to predict the promotional histories of U. S. Naval Academy graduates who entered the U. S. Navy. The first section of the thesis deals with the U. S. Navy's promotion system as that system is central to the remainder of the study.

The United States Navy has since its inception developed in Naval tactics, Naval strategy, and weapon system sophistication. This developmental process has generally allowed the Navy to attain and remain at the forefront of the world's great Navies. However, in the area of personnel selection, and specifically that of officer promotion, the natural maturation process seems to have been lacking. This fact has been recognized by some leaders and from time to time boards have been convened to examine the then current status of the Naval Officer promotion system. These boards have invariably focused on the criteria used by Naval selection Boards to

determine who "is best fitted" for promotion to the next higher grade. The Secretary of the Navy ordered one such board convened in 1963. That board, focusing on selection to Captain and Flag rank, was known as the "Board to Examine and Recommend Criteria for Selection to Flag Rank in the Navy." In this thesis, this board will be referred to as the "Pride Board." (See Appendix A for a summary of their recommendations.)

The Pride Board was typical of previously convened boards in its conduct and deliberations. However, in Recommendation Five it officially recognized that the Navy was relying on the individual "selection board members' own criteria as to the general characteristics of integrity, judgment, service reputation, etc." [Pride, p. v]. The board recognized that individual members perceptions of criteria for selection would vary and that board members should remember that the flag officer must be adept in interpersonal relations with other governmental officials, the congress and the general public. The Pride Board's third recommendation stated that, in general, the selectee

> must be articulate in both written and oral communications, progressive in outlook, experienced in administration and capable of performing semi-diplomatic, intra-governmental and social duties...as well as have the strong moral fibre, physical stamina and professional ability required of all high ranking officers [Pride, p. 3].

The board also recognized that the board members bring their own yardsticks for these various criteria into the board room.

Part of Recommendation Four reads, "These standards of character, conduct, performance and reputation continue substantially unchanged from year to year [Pride, p. 37." These excerpts from the Pride Board Recommendations reflect the fact that Naval leaders recognize that many of the criteria for selection and promotion are unwritten and that the evaluation for the total man requires evaluators to make judgments concerning each candidate's qualifications to assume the responsibilities of higher rank.

Navy selection boards continue to use broad variables such as "integrity," "willingness to accept responsibility," "intellect," "judgment," Command ability," "education," and "Service reputation" in their deliberations [Pride, p. 3, 47. The Pride Board recognizes these variables and exhorted future boards to "consider the whole record" in their deliberations. The Secretary of the Navy has historically enjoined boards to consider various factors through the use of his "precepts" given to the President of each convened board. Some of the factors frequently cited in these precepts are physical stamina, energy, social grace, attributes of mind and heart, moral courage, character, personal leadership and Service reputation. Appendix B is a reproduction from the Pride Board showing the criteria specifically enumerated by Secretaries of the Navy from 1954 through 1962.

Additionally, although the Naval Service has changed its fitness report form frequently, rating blocks for judgment,

imagination, analytical ability, personal behavior, forcefulness, and military bearing have been continuously included through to the present form.

When viewing the officer's total record the boards utilize the officer's "Selection Board Jacket." The jacket contains all official correspondence from the officer concerning his career, all fitness reports, and a current official photograph. One question this thesis will address is, what is the impact of the officer's photograph upon his or her selection or non-selection? An officer's career information, including a comparison grading of his past fitness reports is condensed upon a single card which is flashed upon a screen in front of the selection board members. Present on the left hand side of the summary card is the photograph of the officer. (Normally the photograph shows the officer in Service Dress Blues, but Tropical Whites Long are a permissable uniform.)

The possible importance of the photograph can be inferred from the following quote from the writings of Gordon Allport:

> The visual cue, then acts as an anchorage point to which all manner of associations are tied. Among these associations are an additionally array of sensory ideas. We skip quickly from the visual perception to the thought that the "blood" of people with differing skin colors must be different; also their odor and their impulses. We thus develop sensory, instinctive, "zoological" explanations of our negative attitudes.
>
> The process is natural enough because sensory aversions and annoyances are in fact common experiences. All of us have some almost reflex feelings of dislike or repugnance--perhaps to the feel of peaches, to the odor of garlic, the sound

> of chalk squeaking on a blackboard, to people with oily hair, bad breath, to streaky dishes, the taste of marshmallows, or to women who talk baby talk to their lap dogs. One investigator asked over a thousand people to name their antipathies, and found that on the average each person mentioned 21 such sensory- or pseudosensory-dislikes. Furthermore, about two-fifths of the antipathies had to do with human physical traits, mannerisms, clothing [G. Allport, p. 136].

The purpose of the foregoing has been to bring the Naval promotion board selection process clearly into focus. While there are professional qualifications which must be met before an officer can be considered eligible for selection, there remains the fact that decisions concerning an officer's promotion hinge on subjective judgments by other Naval officers. These judgments are affected by the officer's perception of the various general criteria for promotion; this was recognized in the official report of the Pride Board. Nothing appears to have transpired in the twelve years since the Pride Board to make their observations and recommendations less plausible. It is interesting to note that for the last two years the use of official photographs has not been mandatory for selection boards. However, according to more than one reliable source, no president of a duly constituted and convened selection or promotion board has elected not to use the photograph.

The reason commonly given for the presence of the photograph is that it "helps to identify the subject officer in case he may be known to someone on the board." Laird has written that photographs are useful and that, "Appearance is

to be considered for some types of work, but it is no indication of ability [Laird, p. 9_7." In any case, the photograph is in the officer's official record and is seen and used:

(1) by individual board members who are reviewing the officer's record (the results are tabulated and placed on the view card),

(2) Bureau of Naval Personnel detailers while they are reviewing the officer's record in order to assign the officer to billets necessary for career advancement,

(3) Bureau of Naval Personnel aide detailers who are attempting to satisfy the special requirements of various Admirals in need of aides, and, finally

(4) the photographs are sent along with a career synopsis to Admirals desiring a new aide.

Informal interviews with several present and past Bupers detailers have made it clear that photographs can play a decisive role in these decision processes. In fact, it is said that on more than one occasion the photograph has been the sole determining factor in the final selection of individual officers for various duties.

II. PROBLEM

The prediction or estimation of an individual's future performance and the determination of the best method to make that prediction represent age old problems. The isolation and examination of predictors including fitness reports and the various scores generated at the service academies are of particular interest when predicting officer promotions. But, which of, the several characteristics for which data exist are predictive of future leadership ability or professional performance? In the next section, past studies are reviewed which show that such relationships exist, and, where appropriate, results which partially answer some of the following questions are reported.

> Should promotion or selection boards view certain factors more critically than others and, if so, which factors are these?
>
> Are there factors which have not been previously treated as predictors which should be examined?

For example, are peer ratings as represented by Naval Academy aptitude standing scores predictive of future performance?

Since promotion Boards are subjective in their interpretation of the various criteria for selection, there remains the possibility that unreported factors exist which do exert an influence on the Board's findings.

Do photographs influence the results of boards?

Do some relationships exist between service academy standing scores and judgments of photographs of Naval officers?

This thesis examines archival data as predictors and also uses judgments of photographs of U. S. Navy officers in attempts to predict the promotion histories of a sample of U. S. Navy officers. The questions raised by the continued use of photographs in various situations are many.

Does the official photograph required for each Naval officer's record affect his career?

If the presence of the photograph does make a difference, how and why does it make a difference?

Is physical attractiveness, as it might be judged from a black and white photograph, correlated with promotional viability?

These questions will be addressed throughout the rest of this thesis.

III. SOME FACTORS POSSIBLY PREDICTIVE OF PROMOTIONAL VIABILITY

This thesis was intended to determine some attributes which may be predictive of promotional viability in the Navy. As one part of the study, judgment of photographs were used in predicting promotional success.

The purpose of the literature review was to examine factors, traits and characteristics useful in predicting leadership ability. Under the present Navy promotional system, it follows that leadership ability should be related to promotional success. The correlates covered in this thesis include physical attractiveness, stereotypes, intelligence, scholarship, height, weight, grooming, athletic prowess, sociability (as indicated by extracurricular activities) and other characteristics reportedly indicative of future military success. Many of these factors are assessed at the various U. S. service academies. These factors include

(1) aptitude for service ratings,

(2) conduct,

(3) leadership potential,

(4) academic aptitude (as indicated by overall class standing),

(5) athletic ability, and

(6) physical fitness.

A. TRADITIONAL APPROACH INDICATES POSSIBLE PREDICTORS OF LEADERSHIP

Lewis M. Terman's A Preliminary Study of the Psychology and Pedagogy of Leadership (1904) represents an attempt to discover those pupils in the primary school grades who might be termed "leaders" and to ascertain the qualities which provided this position of status within the group. Tests were administered to groups of children in an effort to separate the "leaders" from the "automatons" or non-leaders. Then, teachers were asked to evaluate the two groups on variables such as health, fluency of speech, timidity or forwardness, and personal appearance. Results of the investigation showed that pupils thought of as leaders were generally larger, better dressed, better speakers, and significantly better looking [Jenkins, p. 62, 1947].

S. C. Kohs and K. W. Irle conducted an investigation in 1920 which examined factors which could possibly aid in predicting the progress of 116 Reed College students who entered the service of the Army or the Navy. The data upon which such a prediction could have been made were (a) the quality of their college work and (b) faculty estimates regarding

(1) their physical qualities,

(2) their intelligence,

(3) their leadership,

(4) their personal qualities and

(5) their general value to the service.

For the purposes of the investigation, data were obtained from three sources, (a) Ratings. Each of three judges (Reed College faculty members) rated each student in the five traits enumerated above. (b) Marks. College grades were obtained from the Registrar's office. These were grouped under 3 headings (Natural Science, Social Science and Languages). (c) Army Rank. Briefly, the conclusions of this study were that:

(1) school marks were inefficient instruments for determining whether a student will make good progress in the Army;

(2) human judges with all their frailties, are on the whole more efficient prognosticators of progress than the school marks which students obtain;

(3) the best criteria for prophesying success were the judges' estimates of "value to the service," and the judges' estimates of intelligence.

The results of this investigation are of interest because they represent an attempt to correlate Army promotions with trait ratings. In their study Kohs and Irle imply that if objective tests had been utilized to measure the traits higher correlations might have been obtained.

B. JUDGING LEADERSHIP SUCCESS FROM PHOTOGRAPHS

Landis and Phelps (1928) used two evaluation groups (one of students and one of trained personnel workers) to examine two sets of pictures of the same people taken at college

graduation and again twenty-five years later. The investigation concerned whether or not the judgments by these individual judges would be predictive of the subjects' success or non-success in their given fields of endeavor. The subjects were divided into successful and non-successful groups within each of the two different photograph age sets. The judges were then asked to indicate whether the subject was successful of not by examining the photographs. The results were tabulated as shown in Figure III.

FIGURE III

Judges	Per Cent of Young Judged Correctly	Per Cent of Middle-Aged Judged Correctly
College Students	47.3	51.3
Personnel Workers	52.2	52.8

According to Ruch (1953) the above results of the judgments were no better than chance [Ruch, p. 360].

1. Special Historical Basis

The study by Landis and Phelps mitigates against judgments of photographs being valid predictors of success. However, Robert K. Yin states that the human face may be a special visual object. Later in his study Yin writes that "the average person uses the face as a source of a great amount of information about other individuals. Identification is but one aspect of this information; faces also serve as the basis for inferences about character and personality,

mood, and the specific feelings expressed by another person [Yin, p. 1]." Yin quotes Timothy Mar as writing that, "The Chinese study of the face purports not merely to provide judgments of character, but also to serve as the basis for telling one's fortune."

2. Factors Affecting Judgments of Photographs

The Yin study reveals that there are other factors which may have a bearing on whether or not judgments of black and white photographs are predictive of promotional viability. One of these factors is facial expression. Woodworth and Schlosberg (1954) have shown that individuals have an exceptionally difficult time judging any expression but the most obvious (contempt, laughter), and especially unstable predictions are made when the photographs are taken out of their environmental context. This finding augers against some sorts of predictions from photographs.

The angle of the photograph (full, three-quarters, profile), according to results obtained by Martin and Woodworth, definitely influences an evaluator's ability to rate features, and answer general questions pertaining to a photograph just viewed.

Another factor with many implications is stereotyping. In this case prejudice, race, physical size (somatotype) and the stereotype held of a "typical" Naval officer all possibly come into play. Again, it matters not that these perceptual sets are rooted in the subconscious level of each person (evaluator). The assumption must be that they cannot control

their responses to features shown in the photograph and that this will bias their judgmental ability concerning the subject's attractiveness (even relative) and his opportunity for success in a Naval career.

C. SURVEY OF LEADERSHIP PREDICTORS

1. General References to Leadership Judgments

R. M. Stogdill in a 1955 Naval Leadership study found that Naval officers use an informal, yet complex set of variables with which to judge whether or not another officer will perform adequately in a given job. The conclusion of Stogdill's study relevant to this paper is that "All of these findings point to the importance of the predictors having some perception of the subjects as total human beings [Stogdill, p. 58]." The study also found that the Naval officers as judges

> were more successful than both trained psychologists or sociologists in using these arrays of numbers as a basis for visualizing the subjects as human beings and in picturing what was happening in an organization [Stogdill, p. 49].

Karsten in The Naval Aristocracy stresses that people tend to overlook many individual shortcomings or failures when they each share the same status or have joined "the Band of Brothers." The "Band of Brothers" concept dates at least to Nelson, who before Trafalgar assembled his captains and enjoined his "band of brothers" to understand his strategy and tactics for the upcoming encounter. Karsten, though, refers to Annapolis as the training ground where Naval Officers join the band. Mylander, in her book The Generals

makes many references to the "mold" and, in general, the cliquishness of Army officers. However, she goes further and refers to appearance, "spit and polish," military bearing and social grace as powerful characteristics, the possession of which can aid an individual officer [Mylander, p. 159]. Some officers such as General Alexander M. Haig, Jr., according to Mylander have been successful, without commanding troops in the field [Mylander, p. 155] because of their appearance as well as their academic pursuits [Mylander, p. 199]. It seems then that the concern of officers for grooming, bearing and general appearance has, in fact, been rewarded.

2. Methods of Studying Leadership Predictors

R. M. Stogdill (1948) surveyed the literature concerning leadership and leaders' traits and characteristics. Stogdill found that there were several methodological approaches employed to identify and attempt to study personal characteristics of leaders. Among these methods are (a) observations of behavior in group situations, (b) choice by associates (voting), (c) nomination or rating by qualified observers, (d) selection (and rating or testing) of persons occupying positions of leadership, and (e) analysis of biographical and case history data. There was no indication given concerning which studies utilized photographs of faces as part of their investigation. According to Stogdill, the most fruitful studies were those using direct observation and analysis of biographical and case history data.

3. Leadership Characteristics

Stogdill enumerates some twenty-nine traits or characteristics, many of which, incidentally are on the current U. S. Navy fitness report. These factors are (a) physique, energy, health; (b) appearance (better dressed, bearing); (c) fluency of speech; (d) knowledge; (e) judgment and decision; (f) initiative, persistence, ambition; (g) responsibility. In essence, the traits surveyed via this literature review by Stogdill covered the entire gamut of traits. The summary comments made by Stogdill indicate that a leader exceeded the average member of his group in

(1) intelligence,

(2) scholarship,

(3) responsibility,

(4) activity and social participation, and

(5) socioeconomic status.

4. Variables Having a High Correlation with Leadership

Stogdill (1948) lists the following items as having the highest overall correlations with leadership: originality, popularity, sociability, judgment, aggressiveness, desire to excel, humor, cooperativeness, liveliness and athletic ability. These factors are listed in descending order of average correlation coefficient. Neither the method of arriving at the coorelation coefficient nor a specific definition of terms was offered by Stogdill.

Stogdill continues in his summary by stating that

> in spite of considerable negative evidence, the general trend of results suggests a low positive correlation between leadership and such variables as chronological age, height, weight, physique, energy, appearance, (italics added) dominance and mood control [Stogdill, p. 64, 1948].

Page, as quoted by Stogdill (1948), after studying West Point cadets,

> found first year leadership rank to be correlated .667 with fourth year leadership rank. Rank in bearing and appearance (italics added) was most highly correlated with rank in leadership; while rank in athletic activities, tactics and academic standing were correlated with leadership rank in progressively lesser degrees [Stogdill, p. 62].

In the following section the possible correlation between physical attractiveness and career success is examined.

D. PHYSICAL ATTRACTIVENESS AND ITS JUDGMENT

1. Perceptions and Judgment

There exists in the body of literature some findings indicating that physical attractiveness has a bearing on a person's success in his career. In Berscheid and Walster (1974), it is reported that in an unpublished study, Miller found

> physically attractive individuals are likely to be perceived as masters of their fate, as individuals who behave with a sense of purpose and out of their own volition, whereas unattractive individuals are more likely to be seen as coerced and generally influenced by others or by environmental conditions [Berscheid and Walster, p. 172].

2. Factors In Judging Others

In Britt (1950) Gordon W. Allport draws heavily on an experience conducted by S. G. Estes (1937) to back his conclusions concerning a person's ability to judge others. Estes utilized motion pictures to show each subject performing simple acts (removing a jacket, loosening a tie, wrestling with an opponent, holding a lighted match and building a house of playing cards). A group of twenty psychologists intensively studied the subjects for one academic year and evaluated each subject's personality. Thirty-seven judges watched the two minute film records (each record shown twice, thus making a four minute "first impression"). These judges were all psychiatric social-workers having at least two years practical experience in addition to their formal training. The judges used the same rating variables as had twenty psychologists. In the words of Allport,

> the conclusion is inescapable that even in a homogeneous and highly trained profession such as psychiatric social work the difference in ability to 'size up' individuals on brief acquaintance from appearance alone is striking [Britt, p. 225].

Allport pointed out the best judges were similar to those they were judging. He quotes Klages as stating that,

> understanding is possible only by virtue of some similarity between the perceiving self and the perceived subject; and as dissimilarity grows, understanding gives way to a failure to understand [Britt, p. 230].

Allport envisions some eight qualifications necessary in a person before he can be a good judge and these are experience, similarily, intelligence, insight, complexity, detachment, esthetic attitude and social intelligence.

If one were to ask a teacher, employer or superior whether a man's handsomeness or a woman's beauty has any effect in determining his or her evaluation grade, fitness for service, advancement or salary, that person would probably laugh. Many people interviewed during the course of this research reacted, perhaps in embarrassment, in exactly this manner. However, most of us are, in fact, aware of the attractiveness of people around us. We systematically categorize the facts and file them away for future reference. For instance, Aronson (1972) asserts that if,

> we like beautiful and handsome people better than homely people, ...we attribute all kinds of good characteristics to them [Aronson, pp. 218-219].

A study by Walster, Aronson, Abrahams and Rottman (1966) further illustrates the importance of attractiveness. In their study, students were randomly matched by a computer for blind dates. They had each previously been given a personality test. Which characteristics determined whether or not they liked each other? The one determinant of whether or not a couple liked each other and actually repeated their date was their physical attractiveness. The foregoing shows the importance of physical attractiveness. In the next section the stereotyping phenomenon will be examined.

E. PHYSICAL ATTRACTIVENESS STEREOTYPE

There are more studies which in summary indicate that the more physically attractive a person is perceived to be, then the more success in life will be attributed to him or her.

Berscheid and Walster (1974) reported that Dion, Berscheid and Walster (1972),

> hypothesized that physically attractive stimulus persons, ...are assumed to be more likely to possess socially desirable personality traits and are expected to lead more successful lives than unattractive persons [Berscheid and Walster, p. 169].

The results of the experiment conducted by Dion et al. were in fact that more physically attractive persons of both sexes were expected to be more likely to possess almost every personality trait which had been determined to be "socially desirable" in a preliminary study. In fact the stereotype for men and women differed little.

> For example physically attractive people... were perceived to be more sexually warm and responsive, sensitive, kind, interesting, strong, poised, modest, sociable and outgoing than persons of lesser physical attractiveness [Berscheid and Walster, p. 169, 1974].

Furthermore, Berscheid and Walster report that various experiments have determined that there appears to be virtual agreement among people of both sexes as to whom is, in fact, physically attractive [Berscheid and Walster, p. 182, 1974]. Additional evidence of stereotyping is offered by Doob, who, while analyzing various social characteristics of criminals as a causal factor of crime writes that "criminals have a

'poorer' physique, are less healthy, and tend to be more unattractive [Doob, p. 359]." In the next section more possible predictors of leadership success are examined as are factors influencing judgments of leadership potential.

F. OTHER ATTRIBUTES AND LEADERSHIP SUCCESS

1. Appearance

Gibb conducted another of the surveys on leadership and in general found that,

> Several studies have investigated the appearance, dress, etc. of leaders and have, in general, agreed in suggesting a possible relationship between appearance and holding a leadership role. Thus, Partridge (1934), ...who studied Boy Scout leaders, found a correlation of +0.81 between appearance ratings and leadership status. Acherson (1942) found that slovenliness and leading others in misconduct correlated +0.32 for delinquent boys and +0.31 for delinquent girls. Dunkerley (1940) found that female students chosen as leaders in social activities differed significantly from non-leaders in appearance and dress, but those chosen for leadership in intellectual and religious activities did not differ significantly from non-leaders [Gibb, p. 217].

According to Mylander; the, "equation of appearance with performance is rooted in martial tradition [Mylander, p. 271]."

2. Height

Mylander suggests that "informal selection criteria even suggest that the junior aide be taller than Mrs. General so he can dance with her [Mylander, p. 239]." Gibb states that on the basis of current literature it seems that,

> when height is a significant factor in the achievement of leadership status, it is so as a result of its correlation with other factors which, in some situations are significant for the assumption of the leadership role [Gibb, p. 218].

3. Grooming

> The first personality factors to impress themselves upon one in meeting an individual are those of a visual nature, such as size, build, posture, features, dress, grooming, etc. [Thomason, p. 118].

Apparently grooming is one of the factors which is related to physical appearance, for one only has to look about himself to realize how many things people do that are related to grooming. Think about facial cosmetics for women, hairstyles and types of clothes. People wear clothes and change hairstyles to show off pleasing attributes or strong points and to hide those characteristics which are thought to be displeasing to the eyes. Secord makes the observation that cultural determinants such as stereotypes and facial expressions, as well as certain inference processes can explain why judges form similar impressions when viewing photographs.

It is precisely because of these perceptual sets that people in general attempt to make themselves appear pleasing. Remembering the Berscheid, Walster and Dion experiments, one can readily see the merit to such actions.

According to Secord,

> In rating women, certain standards and stereotypes concerning the use of cosmetics and other grooming aids appear to be important. The general physiognomic variable, 'well-groomed' contributes to an

> impression of social acceptability and to sexuality ...more specific facial characteristics are relevant: the amount of lipstick..., bowed lips produce an impression of being conceited, demanding, immoral, and receptive to the attentions of men [Secord, p. 303].

4. Facial Cues

Secord and others (notably Yin) have indicated a body of research exists concerning facial cues and their importance in determining a person's personality from a photograph. In Secord's experiment, he utilized an independent group of judges and had them rate certain aspects of facial physiognomy. The mouth, for instance, was rated with a seven-point rating scale. Secord summarized his findings by stating that,

> There are enough data here to suggest that commonly agreed-upon facial expressions account for some portion of the personality impressions which are formed in looking at photographs [Secord, p. 305].

5. Good Appearance and Good Performance

Mylander states that for the Army, "the real proof of the appearance-discipline performance link was the Dominican Republic operation [Mylander, p. 271]." She goes on to relate that the general who commanded the operation (Bruce Palmer) stated that the entire situation could have gotten out of hand if it had not been for the appearance and calmness of the well disciplined troops under his command [Mylander, p. 271]. She later repeats the apparent Army ideological dictum that "good appearance leads to good performance [Mylander, p. 307]."

Ralph M. Stogdill (1948), in commenting on the relationship of appearance to leadership, states that a study by Dunkerley showed that leaders in social activities differed significantly from non-leaders in appearance and dress. Also Partridge and Flemming found that a positive correlation existed between appearance ratings and leadership status. The Partridge study yielded a correlation coefficient of .81 while Flemming's gave a coefficient of .21 [Stogdill, p. 42]. Additionally, Stogdill (1948) reports that Cox 91926), while looking at the early mental traits of 300 geniuses, commented that,

> various groups of great leaders differ markedly in physique, energy output, and athletic prowess, with only military leaders being outstanding in these traits [Stogdill, p. 42].

Terman and Oden provide the following comments concerning size, height, and weight and their possible bearing upon success as a leader.

6. Height, Weight and Intelligence

> As we stated in Chapter iii, the anthropometric measurements made at the time of the original investigations... showed the gifted children as a group to rank above the generality of America-born children in physical development, and also to excel unselected California children in average height and weight. Now we find them as adults exceeding in stature not only the generality of Americans, but also selected groups such as college students and the offspring of old American stock studied by Hrdlička [Terman, p. 94].

The determination was made using samples of 708 men and 568 women. Additionally, this later work by Terman confirms an earlier claim made in 1904 that leaders tend to be more intelligent, larger and significantly better looking than those who are non-leaders. [Terman, p. 352].

G. MILITARY CHARACTERISTICS POSSIBLY INDICATIVE OF LEADERSHIP

In general, studies thus far (except for Page, Kohs and Irle) have dealt with the traits and characteristics, which are not specifically related to military ratings. There are military rating scales which purport to measure factors significant in a young person's military career. Are these factors predictive of the person's future military career?

1. Traditional Indicators

Characteristics often measured at military schools include: "conduct," "aptitude for service" and "leadership." these factors plus "physical training" and "academic standing" are used to determine overall class standing. Upon commissioning, the officer is no longer graded by precisely these criteria, but the new ones are similar. (See Appendix C) Previously Page showed a fair correlation between first year and fourth year leadership. In Mylander's book, The Generals, she quotes a 1971 article by John Carmody entitled, "Making It in the United States Navy."

Although Carmody's article does not represent a thorough study, it is the result of interviews with several high ranking Naval officers. Some of their stated "do's" were

(1) graduate high in the class (top third),

(2) be a graduate of Annapolis and

(3) be a high ranking midshipman officer.

There were additional factors such as to "marry well" and obtain more education. An important feature of several of Carmody's factors is that they can only be achieved by people who have scored exceptionally high in the factors of conduct, aptitude, leadership and academics while at the Naval Academy. (See Appendix D for Mylander's list of "Do's and Don'ts")

2. Possible Best Indicators of Future Performance

Campbell, in summarizing the findings during a particular portion of the Ohio State Leadership studies, stated that, "The conduct-standing score seems the best of the Academy (Naval)-standing variables for predicting future leadership [Campbell, p. 36]." There appears, however, to be a variance between the Army and the Navy as to which variable, conduct or aptitude for service, is the better predictor.

3. Peer Rating Findings

Vielhaber and Gottheil conducted a study utilizing a 12-item Appearance Rating Scale in an attempt to see if the first impression of a person based upon appearance and speaking ability would affect the subsequent ratings received by him on Aptitude for Service Ratings (ASR). According to Vielhaber and Gottlieb, who quote Crockett and Bowen (1961) as stating that the "aptitude for service rating...has been

found to be the best available single predictor of later performance as an officer." In general, interrater agreement tended to be low on the appearance variable (Pearson product moments from .14 (NS) to .58 significant at the .01 level). Nevertheless, combined ratings (means) on the appearance rating scales were significantly correlated with ASR's obtained 14 weeks later (r=.31). In general, the findings suggest that appearance and manner do affect later independent ratings of performance.

Mylander notes that the criteria for entry into West Point gradually evolved until a person would be rejected (for admission) for extreme ugliness, flat feet or vision not correctable to 20/20 [Mylander, p. 38]. Later Mylander notes that the cadets were being graded in their play - meaning in sports - and that "football outranked tennis" and these various weightings were combined into the Physical Education grade [Mylander, p. 46]. Mylander writes that,

> Cadet officers were chosen through a score based upon their performance in academics, athletics, extracurricular activities and conduct... In 1943 West Point introduced the Aptitude for Service Rating. Cadets were rated twice a year by classmates within their company according to estimated leadership ability, with special attention to traits like sense of duty, self-confidence, loyalty, enthusiasm, cooperation and adaptability. When combined with tactical officer ratings, the lists in the aggregate reflected consensus about the best and worst cadets in the company [Mylander, p. 46].

According to Mylander, the Army concluded after thirty years of experience and eighteen studies, that the aptitude ratings are valid, reliable, and accurate predictors of future performance, far more so than grades in academic subjects, physical education, tactics or conduct [Mylander, p. 46].

Critics of these findings have pointed out that the results cued cadets to the expected behavior which caused the increased validity and reliability of the findings. The linking of success to such traits began to cause the phenomenon it was supposedly measuring [Mylander, p. 46].

The review of literature shows that appearance, bearing, and physical attractiveness are acting in concert to affect ratings of various individuals. However, do attractiveness or appearance contribute more or as much to the overall ranking of a subject during the selection process before a board of officers as the other enumerated traits of leadership? This remains a crucial question which this investigation will examine.

H. SUMMARY OF THE LITERATURE REVIEW

According to Hepner,

> The 'Halo Error' is common to all ratings. The general impression of an individual markedly colors our evaluation of his specific traits. If a person impresses us favorably in a general way, or some specific quality that we know he possesses,..., we then tend to invest his entire personality with a luster that causes us to overestimate his desirable traits and underestimate his undesirable characteristics. One executive was asked why he

> rated a certain employee so low in all traits. His answer was to the effect that he did not like people had small mouths and the particular employee had a small mouth [Hepner, p. 363].

When viewing the available literature concerning physical attractiveness, leadership and its associated traits and characteristics, one must note the words of Elliot Aronson who states that,

> Taking all this research into consideration, it appears to be true that physical beauty is more than skin deep. We are more affected by physically attractive people than by physically unattractive people, and unless we are specifically abused by them, we tend to like them better [Aronson, p. 218].

It is a specific point of this investigation that the above relationship probably does bear upon performance marks, fitness reports and the ranking of individuals within a given command, and that the effect of one's appearance may be a significant factor influencing a selection or promotion board.

To determine the relationships of measures such as peer ratings, physical appearance, scholastic achievement, etc., to promotion success in the U. S. Navy, the investigator turned to graduates from the U. S. Naval Academy as a sample for which data could be gathered. The next chapter of this thesis describes the sample of officers and the data gathered about them.

IV. DATA COLLECTION

A. SAMPLE DESCRIPTION AND HISTORICAL DATA

1. Sample

The population sampled was the United States Naval Academy (USNA) class of 1950. This class year was selected because its members are reaching the twenty-five years service point and could have attained, or be approaching the rank of Rear Admiral. It was determined to utilize those members of the 1950 USNA class who were commissioned in the Navy. There were 421 line and 43 Supply Corps Ensigns commissioned. The remaining 227 graduates were commissioned in the Marine Corps (43) and the United States Air Force (184).

2. Sample Size

For this study, a random sample of 100 was chosen from the 464 Midshipmen who were commissioned as Ensigns in the U. S. Navy.

3. Representativeness

A comparison analysis was conducted to determine whether or not the random sample was similar to the entire class percentage of members remaining on active duty. Figure IV shows the results of this comparison analysis.

FIGURE IV

Results of Comparison Analysis

Population	TOTAL OFFICERS Percentage	LINE OFFICERS Percentage	SUPPLY OFFICERS Percentage
Original (N=464)	20.9	21.85	11.62
Random Sample (N=100)	23.0	23.40	16.67

Three people in the random sample had died prior to 1975. One had attained the rank of Captain, one Commander, and one died as a Lieutenant. (See Appendix E for Rank Frequencies)

B. DATA SOURCES

The data sources were

(1) the United States Naval Academy year book, "Lucky Bag," of 1950,

(2) The Naval Academy Alumni Association's "Register of Alumni,"

(3) the United States Naval Academy "Annual Register of the United States Naval Academy,"

(4) the "Register of the Commissioned and Warrant Officers of the United States Navy."

Through these publication, data about each subject's career were gathered. Table I is a listing of those variables on which data were collected for analysis. Personal history data items such as

(1) geographical area of origin,

(2) religion,

TABLE I

List of Variables Upon Which Data Was Collected and Collated

Designator	-	SDESIG	: (1100, 1110, 1310, 1600, 1810, 3100, etc.)
Military Schooling	-	SMILSCH	: (0,1)
Advanced Education	-	SADED	: (0,1)
Highest Rank	-	SRANK	: (01,02,03,04...09)
Conduct Ranking	-	SCOND	: (Percentile)
Aptitude Ranking	-	SAPT	: (Percentile)
Leadership Ranking	-	SLEAD	: (Percentile)
Physical Training Ranking	-	SPHYTRG	: (Percentile)
Overall Class Standing	-	SCLSTDG	: (Percentile)
Prior Enlisted Service	-	SEXENL	: (0,1)
Prior College Attendance	-	SPRCOLL	: (0,1)
Extra Curricular Activities	-	SEXTRA	: (0,1)
Varsity Athletics	-	SVARS	: (0,1)
Non Varsity Athletics	-	SNVARS	: (0,1)
Biographical/Photographic Perception	-	SLGF	: (0,1)
Naval Reserve Rank	-	NAVRESRK	: (04,05,06,07)
Rank Prediction Based On Photograph	-	WPREDRNK	: (01,02,03,...09)
Physical Attractiveness from Photograph	-	SATTR	: (01,02,03,04,05)

(3) whether or not his father had been in the service,

(4) foreign language studied, and

(5) highest medals earned, were available but not used. Appendix G describes each variable for which data were gathered and Appendix H shows the columnar placement of each of the variables upon the keypunch cards, and Appendix I shows the data compiled for the one hundred cases in the sample. The names have been removed for the reason of confidentiality.

C. VARIABLE DESCRIPTION

The variables on which the investigator collected data were

(1) prior enlisted service (SEXENL): each subject was assigned either a zero for no prior service or a one for any amount of prior service,

(2) prior college (SPRCOLL): each subject was assigned a zero for no prior college or a one for any amount of prior college,

(3) varsity athletics (SVARS): each subject was assigned a zero for no varsity participation and a one for varsity participation in any sport,

(4) non-varsity athletics (SNVARS): each subject was assigned a zero for no non-varsity participation and a one for non-varsity participation,

(5) extracurricular activities (SEXTRA): each subject was assigned a zero for no participation in extracurricular activities and a one for participation,

(6) biographical and photographical appraisal factor (SLGF): each subject was assigned either a plus (one) or a minus (zero) rating based upon this investigator's impression of their career potential after reading a biographical sketch and evaluating the subject's photograph,

(7) Naval reserve rank (NAVRESRK): indicates the rank attained by each applicable subject only if the reserve rank held is higher than the terminal rank held on active duty,

(8) subject's designator (SDESIG): indicates each subject's warfare specialty or area of professional service if not a line officer,

(9) subject's rank (SRANK): indicates the highest rank held or attained by each subject while on active duty,

(10) subject's conduct (SCOND): the relative ranking assigned in comparison with all of the subject's USNA classmates in the area of conduct becoming a Naval officer (midshipman),

(11) subject's aptitude (SAPT): defined as the relative ranking assigned in comparison with all of the subject's USNA classmates in the area of aptitude for the Naval service,

(12) subject's leadership (SLEAD): the relative ranking assigned in comparison with all of the subject's USNA classmates in the academic area of Naval leadership and potential Naval leadership ability as judged by the subject's leadership instructor,

(13) physical training (SPHYTRG): each subject's cumulative ranking in physical training courses and tests in comparison with all of the subject's USNA classmates,

(14) overall class standing (SCLSTDG): the overall and cumulative ranking of the subject in comparison over four years with all USNA classmates. The ranking includes the weighted variables of aptitude, conduct, leadership, physical training, summer cruise marks and academic marks in all courses,

(15) military schooling (SMILSCH): each subject was assigned a one or a zero dependent upon whether or not any military schools had been attended other than those required by a subject's designator, therefore, only schools such as Armed Forces Staff College, Naval War College or National War College, for example, were included,

(16) additional education (SADED): each subject was assigned a one or a zero dependent upon whether or not schools awarding degrees higher than a Bachelors degree were attended by the subject, award of the degree or the level of the degree awarded was not a factor.

The remaining two variables

(17) subject's adjudged attractiveness (SATTR) and

(18) the subject's predicted highest rank (PREDRNK), were assigned from the ratings given the photographs by U. S. Navy officer/students at NPS.

The criteria measured during the subject's tenure at USNA were published in relative standing with the entire 691 graduating members. These relative figures were converted to percentile scores for entry into the data fields. Navy officer designators listed are those currently held, or held when the subject left the Navy. Many subjects had changed designators (a career path choice) and, some, more than once. However, this factor was not considered a predictive factor for the purposes of this thesis.

Some errors may have been made when recording varsity or non-varsity athletics and extracurricular activities. These facts were recorded where found and no entry made for a neutral finding: that is, where no mention was made as to the subject's athletic ability or lack of athletic ability, or extracurricular activity the investigator always assigned a negative or zero finding. All midshipmen are required to participate in athletics, therefore, these factors illuminate only those subjects who were clearly involved. At best, however, these factors are only inferences from the 1950 "Lucky Bag."

The biographical/photographic factor (SLGF) was based solely upon the investigator's feeling after reading the biographic sketch and comparing the individual's appearance with that of his classmates. No other data were known to the investigator when this determination was made. The investigator recognizes this variable represents only one person's perceptions of others and these perceptions arise

from the limited dimensions of biographic sketches and photographs. This measure was generated because the investigator was curious as to whether or not he could predict promotional success. The next section will discuss the development of the photograph rating scales and the conduct of the photograph rating session.

D. DEVELOPMENT OF SCALES FOR RATING THE PHOTOGRAPHS

The photographs of the 100 individuals were copied and made into 35 mm slides from the 1950 Naval Academy yearbook, "The Lucky Bag." Ten of these slides were randomly selected for use during the testing of the three proposed rating scales. All of the 100 photographs showed the face at a full-front view.

The goal of the pretesting of the rating scales was to identify one or two rating scales yielding reliable judgments of the photographs. Three rating scales were formed for test and evaluation; they are shown below.

Scale 1. The individual looks exactly like a Naval officer should look.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

Scale 2. The subject is physically attractive.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

Scale 3. What is the highest rank you think this subject will attain?

1 = Ensign
2 = Lieutenant junior grade
3 = Lieutenant
4 = Lieutenant Commander
5 = Commander
6 = Captain
7 = Rear Admiral
8 = Vice Admiral
9 = Admiral

Seven Naval officer students in a class at the Naval Postgraduate School used the three rating scales to judge the then randomly selected photographs. The rating scales were distributed in such a way that each rating scale was used approximately equally often as the first, second or third rating scale. The set of ten slides was cycled through three times so that each subject only used one rating scale during each of the three cycles. One week after the first pilot test, the same seven officer students again judged the ten photographs. Table II summarizes the results obtained from the pilot testing of the three rating scales.

As can be seen by examining the data in Table II, the inter-rater agreements were higher for time 2 than for time 1. The three interscale correlations also were higher for time 2 than for time 1, probably indicating the increased influence of a single general rating predisposition. Scale 2 and 3 had slightly higher consistency over time than did Scale 1.

TABLE II

Results of the Pretesting of Three Rating Scales

Sample Size = 7

	Scale	Average Correlation Between Pairs of Raters	Estimated Reliability of Average Ratings	Correlation Between Average Ratings Time 1			Correlation Between Scales Time 2		
				1	2	3	1	2	3
Time 1	1	.183	.61	-			.81		-
	2	.18	.61	.74	-			.85	-
	3	.21	.65	.83	.42	-	-	-	.91
Time 2	1	.35	.79	.81	-	-	-		
	2	.28	.73	-	.85	-	.93	-	
	3	.31	.76	-	-	.91	.87	.74	-

The statistical results led the investigator to prefer Scales 2 and 3 over Scale 1, albeit their relative superiority seemed slight. The investigator wished to use no more than two rating scales during the data collection and he wished to obtain, if possible, a direct estimate of rank that each subject would attain. Hence, scales 2 and 3 were selected for use by officers when judging the 100 photographs.

E. CONDUCT OF THE PHOTOGRAPH RATING SESSION

Twenty-three officer/students in a management policy class participated in rating the photographs. The session was conducted in the same manner as was the pilot test of the rating scales. The photographs were randomly loaded into slide carousels and the 23 judges were given instruction and recording sheets for each of the two scales used. The stimuli were shown for 15 seconds each. Eleven of the judges rated the photographs on one scale while the other twelve judges rated the remaining scale. A short break was taken at the end of the first iteration, the group of judges was then recovened, scales shifted, and the process repeated. The results shown in Table III are the average correlations between pairs of raters and the correlation between average ratings.

The judges supplied some personal history data (e.g., designator, rank, and source of commission) and from these data it was determined that the judges' backgrounds (on these variables) were representative of Naval officers

TABLE III

Inter-rater and Inter-scale Agreements On
Final Data Collection Session

Sample Size (N)	Scale	Average Correlation Between Pairs of Raters	Estimated Reliability of Average Ratings	Interscale Correlation 2	Interscale Correlation 3
11	2	.344	.862	--	.520
12	3	.206	.740	.520	--

currently on active duty. The judges chosen to evaluate the photographic stimuli were randomly chosen by the management curricula office at the Naval Postgraduate School. The judges had no prior knowledge of this study or the manner in which their judgments were to be utilized.

Twenty-three judges were used because of the desire to obtain statistically reliable ratings of the photographs. As has been shown by Ghiselli [Ghiselli, p. 259, 1964] and many others, the reliability of a set of ratings can be increased by obtaining judgments from more raters and calculating average ratings. The data from the pilot testing of the rating scales revealed that the reliabilities of the ratings were quite low. (The reliabilities are given in Table I.) However, as Ghiselli [Ghiselli, p. 259, 1964] shows, average ratings with reliabilities of around .80 could be obtained by using twenty raters. For this reason, efforts were made to conscript at least twenty NPS officer students to act as raters.

F. ANALYSIS OF PHOTOGRAPH RATING DATA

Once the data had been collected, the first step in the analysis was to calculate the average rating on each of the two rating scales for each of the one hundred subjects.

G. STATISTICAL ANALYSIS OF VARIABLES

An intercorrelation matrix was computed including all the personal history variables and the two variables created from the judgments of the photographs. The listing is shown in Appendix F.

Stepwise multiple regression was used to predict rank attained (SRANK). The analyses were conducted utilizing a random sample of N = 68 to determine the regression equation coefficients. These equation coefficients were then applied to the remaining (N=30) cases from the original sample. The results are discussed in Chapter V of this thesis.

V. RESULTS

Several programs contained in the Statistical Package for Social Sciences (SPSS) were used in analyzing the data. The first computer runs focused on examing the intercorrelations among the variables - predictors and criterion. These correlations are shown in Appendix F. (Naval Reserve Rank was not included in terminal rank attained.) The relationships discussed below are shown in Appendix J. Among the Naval Academy class standing scores, leadership ranking (SLEAD) showed a low positive correlation with SCOND (Midshipman conduct) ($r = .339$, $p < .001$), a moderate positive correlation with SCLSTDG (overall class standing) ($r = .5364$, $p < .001$) and, surprisingly, had a low negative correlation with SVARS (varsity athletics) (-0.2311, $p < .05$). The aptitude for service ranking (SAPT) and physical training (PHYTRG) scores had a low positive correlation ($r = .3304$, $p < .001$). Since overall class standing (SCLSTDG) is partially comprised of the other Academy standing scores it's interesting to note the relative weighting which appears to have been given to leadership, aptitude for service, conduct and physical training. The relative order of weighting appears to be leadership ($r = .53$), conduct ($r = .39$), aptitude ($r = .30$) and physical training ($r = .145$). The following information was obtained from Dr. G. J. Mann, Chairman of Behavioral Sciences, United States Naval Academy during a phone conversation with the

investigator: For the class of 1950 the standing score for leadership was based upon one academic course grade. The course was a one semester, three hour principles of leadership course. The grade was based upon case study analyses, quizzes and the final exam grade. There were no peer rankings associated with the grade. Additionally Dr. Mann confirmed that the apparent weighting order of leadership, aptitude, conduct and physical training indicated by rank ordering the correlation coefficients was, in fact, the order in which the variables were weighted.

Multiple regression runs were made to determine if attained Naval rank could be predicted from the variables available. Before conducting these multiple regression runs, the sample of one hundred was refined. First, data for two individuals were deleted because they had died on active duty prior to 1972. (1972 was chosen as the year to stop collecting archival data, because the sample rapidly diminished in number after this date.)

The two individuals appeared to be upward mobile in the Navy at the time of their death, so it was felt that their terminal ranks were perhaps lower than what they would have otherwise attained, and their data were deleted. Tables IV and V summarize multiple regression runs and provide results for the entire sample of ninety-eight. The sample of ninety-eight was then randomly split into two subsamples: a validation sample of N = 68, and a cross-validation sample of N = 30.

TABLE IV

Results of Stepwise Multiple Regression With Rank As The Dependent Variable
(Not Using Variables Derived From Photograph Judgments)

(N = 98)

Step	Variable Added	Correlation	Constant	Regression Coefficient
1	SLEAD	0.01530	3.51509	0.26860
2	SVARS	0.79651	3.07940	0.36287
3	SLGF	0.68128	2.60083	0.41583
4	SEXTRA	-0.46186	2.80456	0.44392
5	SNVARS	0.29634	2.65512	0.45164
6	SEXENL	-0.22871	2.71976	0.45730
7	SAPT	0.00286	2.63859	0.45961
8	SCLSTDG	-0.00436	2.68412	0.46371
9	SPHYTRG	-0.00279	2.74828	0.46600
10	SPRCOLL	0.12360	2.68629	0.46766
11	SCOND	0.00078	2.65337	0.46784

TABLE V

Results of Stepwise Multiple Regression With Rank As The Dependent Variable (Using All Variables)

(N = 98)

Step	Variable Added	Correlation	Constant	Regression Coefficient
1	SLEAD	0.01530	3.51509	0.26860
2	SVARS	0.79651	3.07940	0.36287
3.	SLGF	0.68128	2.60083	0.41583
4.	SEXTRA	-0.46186	2.80456	0.44392
5.	SATTR	0.36660	1.73900	0.46196
6.	SCLSTDG	-0.00516	1.70639	0.46800
7.	SAPT	0.00513	1.63411	0.47549
8.	SPRCOLL	0.15451	1.55214	0.47805
9.	SNVARS	0.17499	1.54675	0.48264
10.	SCOND	0.00271	1.41132	0.48264
11.	SPREDRNK	-0.10028	1.74111	0.48349
12.	SEXENL	-0.08932	1.79485	0.48418
13.	SPHYTRG	-0.00171	1.83251	0.48494

The dependent variable for all multiple regression runs was terminal or current active duty rank (SRANK). The results of these runs are shown in Table VI. As a cursory examination Table VI will show, the multiple regression equations for predicting rank yielded results which proved to be statistically insignificant upon cross-validation.

At this point it was decided to combine Naval Reserve rank with terminal or current active duty rank for use as the dependent variable. The results are given in Table VII, and, although the multiple regression equations for predicting rank do collapse, the cross-validation results are somewhat better than those shown in Table VI.

Table VIII shows results attained when five variables were forced into the equation in the first two steps in an attempt to determine if the judgments of the subjects' attractiveness would alter the regression results. The results shown in Table VIII clearly show that the order of inclusion does not materially affect the multiple correlations attained. The results still fail to cross-validate.

One of the results of the multiple regression runs was that two variables (SLEAD and SLGF) were consistently entered on the first and second steps of the multiple regression. These variables, however, also failed to cross-validate. The following section discusses results obtained with discriminant analyses.

The next analyses were designed to see if the predictors could differentiate between

TABLE VI

Results of Stepwise Multiple Regressions With Rank
(Not Using Naval Reserve Rank)
As the Dependent Variable

Step	Variable Added	Regression Coefficient	Constant	Validation Correlation (N=68)	Cross-Validation Correlation (N=30)
1	SLEAD	0.02306	2.96045	0.38677	0.1041
2	SLGF	0.88984	2.28434	0.47800	*
3	SVARS	0.56254	2.11378	0.50660	0.1660
4	SPREDRNK	0.43233	0.05047	0.53091	0.2282
5	SEXENL	-0.52707	-0.03272	0.55299	0.1543
6	SCOND	-0.00946	-0.00268	0.57715	*
7	SPHYTRG	-0.00925	0.24839	0.59933	-0.0213
8	SEXTRA	-0.41456	0.71596	0.61246	0.0088
9	SNVARS	0.44738	0.51940	0.62489	*
10	SAPT	0.00410	0.22455	0.62782	*
11	SPRCOLL	-0.16016	0.26219	0.62996	*
12	SATTR	-0.06425	0.24786	0.63016	-0.0290

*Cross-Validations Not Conducted

TABLE VII

Results of Stepwise Multiple Regression With Rank
(Using Naval Reserve Rank)
As the Dependent Variable

Step	Variable Added	Regression Coefficient	Constant	Validation Correlation (N=68)	Cross-Validation Correlation (N=30)
1	SLEAD	0.02180	3.16651	0.36780	*
2	SLGF	0.94638	2.44743	0.47495	*
3	SVARS	0.80891	2.20218	0.53339	*
4	SCLSTDG	-0.01200	2.38749	0.56243	0.1747
5	SEXTRA	-0.50474	2.54499	0.58505	0.1728
6	SEXENL	-0.42208	2.56638	0.59811	*
7	SATTR	0.39625	1.47385	0.61266	*
8	SPHYTRG	-0.00600	1.69292	0.62152	*
9	SNVARS	0.42706	1.68298	0.63262	0.1439
10	SCOND	-0.00551	1.99301	0.63877	*
11	SPREDRNK	0.29368	1.14208	0.64432	*
12	SAPT	0.00590	0.70370	0.64944	*
13	SPRCOLL	-0.11129	0.72656	0.65042	0.2506

*Cross-Validations Not Conducted

TABLE VIII

Results of Stepwise Multiple Regressions With Rank
(Using Five Predictive Variables)
As the Dependent Variable

Step	Variable Added	Regression Coefficient	Constant	Validation Correlation (N=68)	Cross-Validation Correlation (N=30)
1	SPREDRNK	-0.05315	4.43177	0.01840	0.0000
2	SATTR	0.18642	4.35846	0.05962	0.0000
3	SLEAD	0.02209	2.95087	0.38552	-0.0500
4	SLGF	1.01038	3.44418	0.48350	0.2093
5	SCOND	-0.00391	3.36308	0.48751	0.1259

(1) those who make lieutenant commander (LCDR) vs. those who did not; and

(2) those who were on active duty as of 1972 vs. those who were not.

The linear discriminant function methodology was used to make these two analyses.

The discriminant function analyses were conducted using the entire sample of one hundred men. The results of both analyses were similar: one discriminant function was derived and it was composed of a linear combination of the variables SLEAD and SLGF. Table IX gives the weights assigned these variables in the two runs.

Table X portrays the prediction results obtained from the linear discriminant function analyses. The results presented in Table X indicate that the discriminant functions would be of doubtful benefit in predicting who would stay on active duty more than twenty years in the Navy, or in predicting which USNA graduates will not make LCDR in the Navy. The discriminant functions could be used to improve one's predictive accuracy somewhat above the level of chance, but the improvement would be small. In predicting whether or not a USNA class of 1950 graduate will make LCDR, one could be correct 67% of the time by simply guessing that all of them would; using the discriminant function, one could be correct 72% of the time, for a net gain of 5% in correct classifications.

TABLE IX

Standardized Discriminant Function Coefficients from Two Linear Discriminant Function Analyses:
1) Reached LCDR vs. did not;
2) On active duty in 1972 vs. not.

Analysis

Discriminant Variable	Reached LCDR vs. Not	Active in 1972 vs. Not
SLEAD	1.15488	1.00045
SLGF	1.00409	0.92976

TABLE X

Percent of Correct Classifications From The Two Discriminant Analyses

Reached LCDR vs. "Not" Analysis

Actual Group	N	Predicted Group Lt. or Below	LCDR or Above
Lt. or Below	33	27.3%	72.7%
LCDR or Above	67	6.0%	94.0%

% Correctly Classified = 72.00%

On Active Duty In 1972 vs. "Not" Analysis

Actual Group	N	Predicted Group "Not"	"Active"
"Not"	63	87.3%	12.7%
"Active"	37	64.9%	35.1%

% Correctly Classified = 68.00%

VI. SUMMARY AND CONCLUSIONS

The literature review conducted in the course of this thesis attempted to show the wide area covered by researchers looking at leadership and the relationships it enjoys with factors or characteristics such as physical attractiveness, appearance and height, as well as with measurements utilized by the military. Some of these measurements, nominally known as academy standing scores were, as previously noted by Mylander, afforded legitimacy by the Army as predictors of career success. The Army utilizes Aptitude for Service Ratings (ASR) while, according to Campbell, the Naval service relies on academy conduct as the best single predictor of future success. The results obtained during the course of the analysis of data for this thesis clearly indicate that many variables gathered at the Naval Academy are not predictors of future promotional success in the Navy.

The intercorrelations obtained from the entire sample of one hundred (See Appendix F) showed a slight positive relationship between rank attained (SRANK) and scores for leadership, conduct, aptitude, and physical training received at the Naval Academy. Attained Naval rank had only a low positive relationship with judgments made of the photographs (judgments concerning attractiveness and predicted highest Naval rank) by officer students at the Naval Postgraduate School. The majority of the research literature in the area of physical

attractiveness generally holds that physical attractiveness and appearance are important factors in determining success or non-success in social and business endeavors.

There may be explanatory reasons for the non-significant results obtained during the study. One reason concerns possible data gathering inadequacies. Some errors could have occurred by missing pertinent comments pertaining to the subjects in the biographical sketches. Inaccuracies which resulted from this error might be reduced by obtaining more differentiated data from survey questionaires and personal history instruments. Additionally, Academy standing scores might be averaged over all four years instead of merely using the last year's rankings. Another possible problem could have been introduced by having such a restricted sample: only officers who attended the Naval Academy. The people used in the sample probably tend to appear to be similar in their levels of attractiveness due to earlier screenings. Perhaps more differentiation would occur using larger, more varied samples. Additionally, perhaps a study could be initiated to replicate the selection or promotion board environment and provide the same data in the way it is used by such a board.

The criterion measure used in this study could alsc be refined. Attained rank (SRANK) included individuals who attained the same rank in widely different lengths of time, individuals who resigned voluntarily after being promoted, individuals who were passed over once or more for promotion,

and people who were selected early for one or more ranks. The criterion thus failed to differentiate among people who differed in promotion success. Future research should begin by developing a better criterion measure.

APPENDIX A

The Board detected early in its deliberations that a gradual shift in emphasis has already occurred in the standards used for flag selection. Despite general satisfaction with past results and a firm belief in the essential soundness of the selection system, every senior officer interviewed, whether unrestricted line, restricted line or staff corps, showed an awareness of the growing importance of the sub-specialist to the conduct of the Navy's affairs. A further consensus was found to exist as to the need for longer range formal officer personnel planning and the promulgation of a broad doctrine covering career management.

In particular, the Board holds the opinion that flag selection boards need more information than is presently provided in order to select flag officers who will best satisfy the many and varied needs of the Navy. To this end it has recommended that each flag board be provided with a five-year forecast of the Navy's flag officer needs by numbers, technical background, and professional qualifications. Further, a fitness report form tailored to provide more meaningful information on the particular qualities desired in senior officers (captains and above) is needed to assist the selection boards.

Certain matters were also considered having to do with the pyramid of competence which must exist to generate the first-rate men at the top.

Recommendations in the premises follow:

1. Maintain the flag selection system in its present form.

2. Select only such numbers as are required to fill anticipated vacancies, regardless of any permissive authority which may be contained in the proposed Department of Defense Officer Personnel Management Bill (Bolte).

3. Continue vigorous efforts to ensure that there is an adequate number of flag officers to meet the needs of the Navy.

4. Include in the precepts to the selection boards any special considerations deemed necessary by the Secretary for the guidance of the board.

5. Rely on the selection board members' own criteria as to the general characteristics of integrity, judgement, service reputation, etc.

6. Develop a fitness report form more specifically applicable to captains and flag officers.

7. Develop the officer personnel planning in the Bureau of Naval Personnel on a longer range basis. Focus such planning so as to provide information on the needs of the Navy in various categories and the personnel assets in those categories with anticipated losses by years.

8. Provide each flag selection board with an estimate of naval establishment requirements for flag officers by numbers, technical background, and professional qualifications, extending over the succeeding five years.

9. Publish and keep up to date (but without frequent or radical changes) a Navy doctrine for officer career management, to be promulgated by the Chief of Naval Operations.

10. Select, educate, and train the numbers of officers in lower ranks to meet the Navy's requirements for special, professional, and technical qualifications at all levels, including flag rank.

11. Normally assign unrestricted line officers with a postgraduate education or otherwise developed sub-specialty to serve at least two tours ashore in his sub-specialty and one or more at sea, if the billet exists and his experience is required.

12. Assign and identify a sponsor for each significant specialty and sub-specialty group; correlate his responsibilities for career planning with those of BUPERS; and set forth his responsibilities, as regards career management, for his group of officers.

APPENDIX B

CRITERIA/FACTORS	CALENDAR YEARS								
	54	55	56	57	58	59	60	61	62
Future Potential	x			x	x		x	x	x
Past Performance	x	x	x	x	x	x	x		
Potential for Leadership in Combat		x	x	x					
Command at Sea Ability	x	x	x			x	x		
Well Rounded Career	x			x					
Impact of Technology on Career (Channelization & Sub-specialization)		x	x			x	x	x	x
Joint, Combined, Allied or OSD Staff Duty							x		
Early Selection		x	x	x	x	x	x	x	x
Late Selection			x			x			
Government/Inter-service/Congressional/Public Relations		x	x	x					
National versus Parochial/Service Viewpoint							x		
Ability to Represent U.S. Abroad								x	x
Professional Ability/Knowledge		x	x						x
Management/Administrative Ability	x								
Imaginative/Realistic Planning	x			x	x	x	x		
Progressive Outlook		x	x						
Resourcefulness & Objectivity								x	
Mature Policy Direction				x					
Creative/Original Professional Work							x		
Self Expression (Oral and Written)		x	x			x	x		
Intellectual Capacity				x	x				
Physical Stamina		x	x						
Energy				x	x				x
Social Grace		x	x						
Attributes of Mind and Heart				x	x				
Moral Courage		x	x						
Character		x		x	x				
Personal Leadership						x	x		x
Service Reputation							x		

APPENDIX C

1 NAME (Last, First, Middle)		2 GRADE	3 DESIG	4 SSN
5 ACCOUTRA TEMAC	6 UNIT ID CODE	7 SHIP OR STATION		8 DATE REPORTED
OCCASION OF REPORT 9 ☐ PERIODIC	10 ☐ DETACHMENT OF REPORTING SENIOR	11 ☐ DETACHMENT OF OFFICER	PERIOD OF REPORT 12 FROM	13 TO
TYPE OF REPORT 14 ☐ REGULAR	15 ☐ CONCURRENT	16 ☐ SPECIAL 17 ☐ OPS COR	BASIS FOR OBSERVATION 18 ☐ CLOSE	19 ☐ FREQUENT 20 ☐ INFREQUENT
21 EMPLOYMENT OF COMMAND (Summarize major activities of command during this reporting period; do not use code names; unusual or extreme observations.)				22 DAYS OF COMBAT
23 REPORTING SENIOR	24 TITLE	25 GRADE	26 DESIG	27 SSN

GENERAL INSTRUCTIONS

This Appraisal Work Sheet is designed to serve two purposes. First to assist in preparation of the OCR Sheet, Record copy, and second, to provide guidelines for the performance appraisal discussion.

All evaluations made in this report shall be in comparison with officers of the same grade, competitive category (i.e., unrestricted line with unrestricted line, supply corps with supply corps, etc.), and approximate time in grade whom you have known.

Due to space limitations of the OCR Sheet, it is necessary to transcribe percentile evaluation marks into corresponding OCR code letters for certain items. To prevent transcription error, an OCR code letter box has been provided for each of these items to facilitate transfer of the information to the OCR Sheet.

General comments are required in item 88. Any mark in boxes with an asterisk (*) indicates adversity and supporting comments are required in item 88. The officer receiving adverse marks must be informed of such and be given the opportunity to make a statement.

28 DUTIES ASSIGNED. *Identify principal duties assigned, primary, collateral duties and watch qualifications, indicating number of months assigned each during the period of report. Indicate inclusive dates of periods of non-availability due to hospitalization, temporary additional duty, and leave and travel between duty stations. For reports based on other than "Close Observation" indicate after primary duty the number of months duties assigned followed by the number of months duties were performed, specially separated from the reporting senior, if available (e.g., 8/4). These duties along with command mission should be discussed with the officer early in the reporting period. (Refer to BUPERS Instr 1611.12 Series for OCR Copy Entry.)*

SPECIFIC ASPECTS OF PERFORMANCE. *The following items are specific aspects of performance. Each aspect has the sub-items listed below it to assist in defining it and to provide guidelines for the performance appraisal discussion. As you evaluate the officer in each performance aspect, review the sub-items and place marks in the appropriate boxes to the right of each sub-item. The marks in the sub-item boxes are guidelines only. This work sheet is reviewed by the reporting command for the performance appraisal discussion. It is not forwarded with the OCR Sheet. After reviewing the sub-items and indicating strengths and areas requiring greater emphasis, select percentile score from the scale below and place the appropriate transcription code letter in the OCR code letter box to the right of each item for transfer to the OCR Sheet, items 29 through 37.)*

TRANSCRIPTION CODE	N	A	B	C	D	E	F	G	H	I
	N.A./ N.O	TOP				TYPICALLY EFFECTIVE OFFICER		BOTTOM		
PERCENTILE		1%	5%	10%	30%	66%	50%	30%	MARG	UNSAT*

	N.A./ N.O	A NOTEWORTHY STRENGTH	AN ASSET	NEEDS GREATER EMPHASIS	OCR CODE LETTER
29 GOAL SETTING AND ACHIEVEMENT					
A DEFINES REALISTIC GOALS.	☐	☐	☐	☐	
B DEVELOPS PLANS AND PRIORITIES	☐	☐	☐	☐	
C. INVOLVES SUBORDINATES IN PLANNING.	☐	☐	☐	☐	
D. RESPONDS POSITIVELY TO CHANGING CIRCUMSTANCES.	☐	☐	☐	☐	
E EFFECTIVELY ACHIEVES GOALS	☐	☐	☐	☐	
30. SUBORDINATE MANAGEMENT AND DEVELOPMENT					
A. ESTABLISHES EQUITABLE AND CONSISTENT POLICIES	☐	☐	☐	☐	
B CONSIDERS THE IDEAS AND SUGGESTIONS OF SUBORDINATES.	☐	☐	☐	☐	
C. IS EFFECTIVE IN PERSONAL SUPERVISION	☐	☐	☐	☐	
D. PLACES SUBORDINATES IN CHALLENGING SITUATIONS TO DEVELOP THEIR ABILITIES	☐	☐	☐	☐	
E DELEGATES AUTHORITY COMMENSURATE WITH SUBORDINATES' CAPABILITIES	☐	☐	☐	☐	
31. WORKING RELATIONS					
A. WORKS FOR HIGH MORALE WHILE ACCOMPLISHING MISSION	☐	☐	☐	☐	
B COOPERATES HARMONIOUSLY WITH OTHERS	☐	☐	☐	☐	
C ENCOURAGES SUBORDINATES' INITIATIVES IN ACCOMPLISHING WORK	☐	☐	☐	☐	
D GIVES PERSONAL COUNSELING AND TIMELY PERFORMANCE APPRAISAL.	☐	☐	☐	☐	
E ENCOURAGES TWO WAY COMMUNICATIONS	☐	☐	☐	☐	
32 EQUIPMENT AND MATERIAL MANAGEMENT					
A. IS FAMILIAR WITH EQUIPMENT CAPABILITIES	☐	☐	☐	☐	
B CONSIDERS ECONOMY IN EQUIPMENT AND MATERIAL MANAGEMENT	☐	☐	☐	☐	
C ENCOURAGES RESOURCEFULNESS IN MATERIAL UTILIZATION	☐	☐	☐	☐	
D. IS COMMITTED TO IMPROVEMENT OF WORKING AND LIVING ENVIRONMENT	☐	☐	☐	☐	
E SUPPORTS ORGANIZED MAINTENANCE PROGRAMS	☐	☐	☐	☐	
33 NAVY ORGANIZATION SUPPORT					
A EXHIBITS POSITIVE ATTITUDE TOWARD THE NAVY	☐	☐	☐	☐	
B OBSERVES TWO WAY CHAIN OF COMMAND	☐	☐	☐	☐	
C. SEEKS AND ACCEPTS RESPONSIBILITY	☐	☐	☐	☐	
D USES AUTHORITY PROPERLY	☐	☐	☐	☐	
E STRIVES FOR PROFESSIONAL SELF IMPROVEMENT	☐	☐	☐	☐	
34 RESPONSE IN STRESSFUL SITUATIONS					
A RECOGNIZES POTENTIAL HAZARDS	☐	☐	☐	☐	
B RETAINS COMPOSURE AND EFFECTIVENESS	☐	☐	☐	☐	
C ACTS DECISIVELY	☐	☐	☐	☐	
D TAKES EFFECTIVE ACTION	☐	☐	☐	☐	
35. EQUAL OPPORTUNITY					
A TAKES EFFECTIVE ACTION TO INCREASE HIS OWN AND HIS SUBORDINATES' RACIAL AWARENESS	☐	☐	☐	☐	
B INITIATES ACTIONS IN SUPPORTING THE NAVY'S EQUAL OPPORTUNITY GOALS, PROGRAMS AND DIRECTIVES	☐	☐	☐	☐	
C CONSIDERS MINORITY GROUPS IN PLANNING AND IMPLEMENTATION OF PERSONNEL ACTIONS	☐	☐	☐	☐	

36 ABILITY TO SPEAK IN AN EFFECTIVE MANNER ☐ OCR CODE LETTER

37 ABILITY TO WRITE IN AN EFFECTIVE MANNER ☐ OCR CODE LETTER

APPENDIX C

WARFARE SPECIALTY SKILLS. Observe officer's performance and knowledge in executing his military specialty. Indicate evaluation on each applicable skill area by selecting appropriate percentile score from the scale and placing the transcription code letter in the OCR code letter box.

TRANSCRIPTION CODE

N	A	B	C	D	E	F	G	H	I
N.A. N.O.	TOP				TYPICALLY EFFECTIVE OFFICER		BOTTOM		
	1%	5%	10%	20%	50%	50%	30%	Marg	Unsat*

PERCENTILE

		OCR CODE LETTER
SEAMANSHIP	38	
AIRMANSHIP	39	
WATCH STANDING	40	

41. 42. 43. LEAVE BLANK ON OCR FORM

SUBSPECIALTY (Complete if applicable)

SUBSPECIALTY CODE
(Enter subspecialty code from latest ODCR)

44 _____

SUBSPECIALTY REQUIRED BY BILLET
(Indicate whether billet is subspecialty coded)

45. ☐ YES 46. ☐ NO

SUBSPECIALTY UTILIZATION
(Indicate degree of utilization of subspecialty)

47. ☐ FREQUENT 48. ☐ INFREQUENT 49. ☐ NONE

SUBSPECIALTY PERFORMANCE. Indicate evaluation of subspecialty performance by selecting appropriate percentile score from the scale in WARFARE SPECIALTY SKILLS and placing the transcription code letter in the OCR code letter box.

OCR CODE LETTER 50. ☐

MISSION CONTRIBUTION. Evaluate the officer's performance with regard to his contribution to the unit's mission including effective integration of the man and the mission and completion of his assigned tasks.

EVALUATION. Indicate evaluation by placing an "X" in appropriate box and provide supporting comments in section III emphasizing how well the officer contributed to mission accomplishment while effectively integrating man and the mission.

SUMMARY DISTRIBUTION. Enter the total of all officers of this rank and competitive category marked in each corresponding block of item 51 on reports submitted by you on this occasion. Enter 0 for none. Include this officer in the summary. Include Regular, Concurrent and Special Reports submitted by you on officers of this rank on this occasion.

PERCENTILE	NOT OBS	TOP				TYPICALLY EFFECTIVE OFFICER		BOTTOM		
		1%	5%	10%	20%	50%	50%	30%	Marg	Unsat*
51. EVALUATION										
52. SUMMARY										

TREND OF PERFORMANCE. Since last report.

53. ☐ First Report 54. ☐ Consistent 55. ☐ Improving 56. ☐ Declining*

DESIRABILITY. Indicate your attitude toward having this officer under your command in the following categories of assignment. Select the transcription code letter corresponding to the relevant description and place it in the OCR code letter box.

	OCR CODE LETTER		OCR CODE LETTER
57	☐ COMMAND	60. ☐	JOINT OSD
58	☐ OPERATIONAL	61. ☐	FOREIGN SHORE
59	☐ STAFF		

DESIRABILITY	N.A. N.O.	PARTIC DESIRE		PREFER		PLEASED		SAT		PREFER NOT*
TRANSCRIPTION CODE	N	A	B	C	D	E	F	G	H	I

RECOMMENDATION FOR PROMOTION. As a consequence of the officer's established performance and potential during this evaluation period, I would recommend: Indicate recommendation by "X" in appropriate box.

62. ☐ EARLY PROMOTION 63. ☐ REGULAR PROMOTION 64. ☐ NO PROMOTION

IF THIS OFFICER IS RECOMMENDED FOR EARLY PROMOTION rank vs. all officers of the same grade and competitive category recommended for early promotion during the reporting period. Indicate total number of such officers in the "number recommended" box. Indicate this officer's ranking in the "ranking" box. If the officer is 2 of 3 place a "2" in the "ranking" box. If he is 1 of 1 place a "1" in the box.

65. ☐ NUMBER RECOMMENDED 66. ☐ RANKING

PERSONAL TRAITS. "In what percentile do you rate this officer in establishing the following qualities?" Indicate evaluation by selecting appropriate percentile score from the scale in WARFARE SPECIALTY SKILLS and placing the transcription code letter in the boxes provided.

67. ☐ Judgment. Sound reasoning, sensible logical conclusions
68. ☐ Imagination. Resourcefulness, creativeness, constructive planning.
69. ☐ Analytical ability. Logical discrimination between essentials and detail.
70. ☐ Personal behavior. Conservative, sociability and public personality.
71. ☐ Forcefulness. Positive and enthusiastic performances of duty.
72. ☐ Military bearing. Smartness of appearance, correctness of uniform, physical fitness.

(LEAVE BLANK ON OCR FORM) 73. ☐ 74. ☐ 75. ☐ 76. ☐

REMARKS. Significant weaknesses should be discussed with the officer. Has this been done?

77. ☐ NONE NOTED (Skip 78 and 79) 78. ☐ YES 79. ☐ NO

80-81. STATEMENT. The officer shall indicate if he does not desire to make a statement or a statement is attached.

82. SIGNATURE OF OFFICER EVALUATED (DA or BUPERSINST 1610.10 series)

83. DATE FORWARDED. Date reporting senior signed and forwarded report.

84. LEAVE BLANK ON OCR FORM

85. SIGNATURE OF REPORTING SENIOR

86. DATE FORWARDED. Date regular reporting senior signed and forwarded concurrent & special report.

87. SIGNATURE OF REGULAR REPORTING SENIOR ON CONCURRENT AND CONCURRENT SPECIAL REPORT

88. COMMENTS. Remarks concerning officer's overall leadership ability, personal traits not listed above, and estimated or actual performance to combat. Include comments pertaining to unique skills and duties/tasks that may be important to career development and future assignment. A mark is to be used with an asterisk (*) indicates adverse), and explanatory comments are required.

APPENDIX D

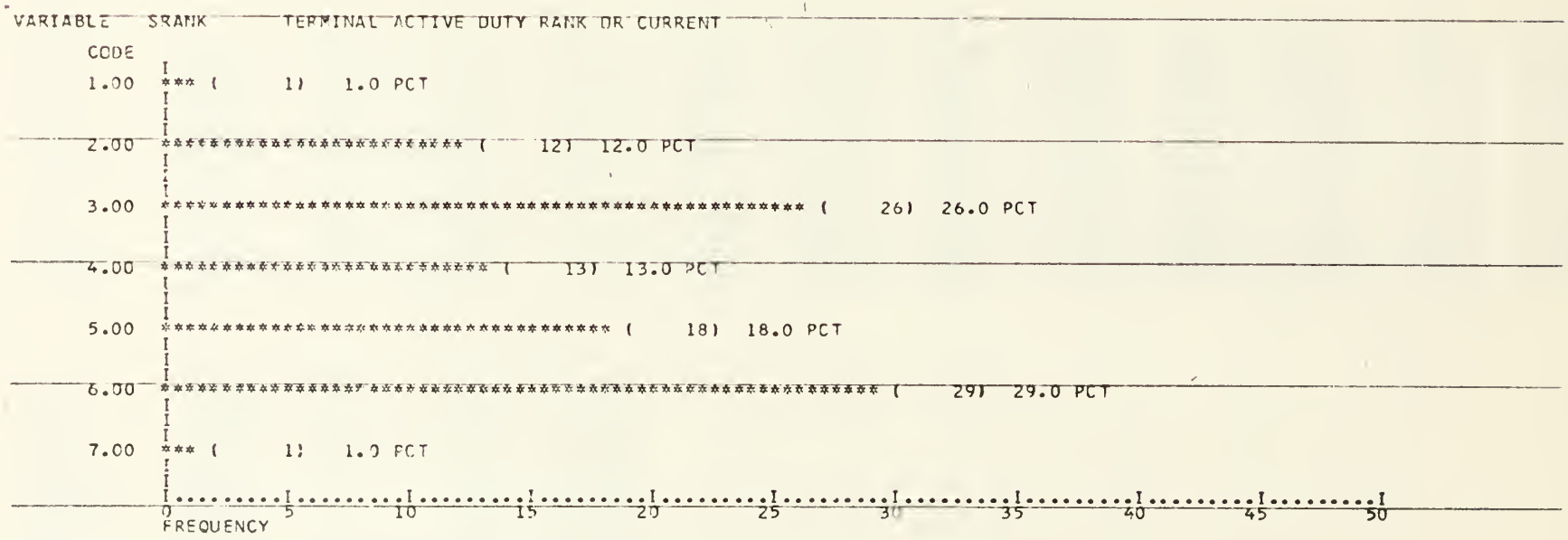
*Mylander's List of Dos and Don'ts

DO	DON'T
Graduate from West Point	Specialize
Join the Regular Army	Have an oddball career pattern
Choose a combat branch	Antagonize the boss
Look sharp	Get a bad efficiency rating
Work Hard	Fail an inspection
Pick the right sponsor	Hunt headlines
Command at each level	Get bad press
Go to war	Be overly critical
Win medals	Buck the system
Marry a wife who loves the Army	Live off post
Get high-visibility jobs	Marry a wife who drinks
Keep your career branch happy	Run up debts
Work at the Pentagon	Have kids with long hair
Serve on a board or study	
Attend staff college	
Attend war college	
Get an advanced degree	
Teach at West Point	
Look good on paper	
Articulate (brief) well	
Keep ahead of the power curve	
Play golf	
Play the odds	

* Taken from Mylander's The Generals pp. 159-160.

APPENDIX E

RANK FREQUENCY HISTOGRAM



STATISTICS..

MEAN	4.260	STD ERROR	0.149	MEDIAN	4.346
MODE	6.000	STD DEV	1.488	VARIANCE	2.215
KURTOSIS	-1.296	SKEWNESS	-0.138	RANGE	6.000
MINIMUM	1.000	MAXIMUM	7.000		

VALID OBSERVATIONS - 100
MISSING OBSERVATIONS - 0

APPENDIX F

CORRELATION SUMMARY TABLE

	SDESIG	SRANK	SCORD	SAPT	SLEAD	SPHYTPG	SCLSTDG	SEXENL	SPRCOLL	SEXTRA	SVARS	SNVARS
SDESIG	1.00000	-0.13013	0.05023	0.04043	0.05921	-0.05708	0.05107	-0.16436	0.03883	-0.12114	0.04467	-0.14736
SRANK	-0.13013	1.00000	0.08396	0.18817	0.28539	0.07286	0.16261	-0.05805	0.03715	-0.12157	0.14515	-0.05026
SCORD	0.05023	0.08396	1.00000	0.16861	0.33956	-0.15698	0.39122	-0.13098	0.00741	-0.01229	-0.08238	-0.09846
SAPT	0.04043	0.18817	0.16861	1.00000	0.16459	0.33044	0.30437	-0.27918	0.05689	-0.07905	0.06122	0.03916
SLEAD	0.05921	0.28539	0.33956	0.16459	1.00000	-0.04695	0.53641	0.07097	-0.05251	-0.06791	-0.23110	0.07103
SPHYTPG	-0.05708	0.07286	-0.15698	0.33044	-0.04695	1.00000	0.14518	-0.14321	-0.02590	-0.10395	0.31174	0.02601
SCLSTDG	0.05107	0.16261	0.39122	0.30437	0.53641	0.14518	1.00000	0.08094	0.07181	0.07503	-0.11830	0.03952
SEXENL	-0.16436	-0.05805	-0.13098	-0.27918	0.07097	-0.14321	0.08094	1.00000	-0.06989	0.14676	-0.12920	-0.01492
SPRCOLL	0.03883	0.03715	0.00741	0.05689	-0.05251	-0.02590	0.07181	-0.06989	1.00000	-0.12500	-0.05225	0.01017
SEXTRA	-0.12114	-0.12157	-0.01229	-0.07905	-0.06791	-0.10395	0.07503	0.14676	-0.12500	1.00000	0.10811	0.10166
SVARS	0.04467	0.14515	-0.08238	0.06122	-0.23110	0.31174	-0.11830	-0.12920	-0.05225	0.10811	1.00000	-0.51479
SNVARS	-0.14736	-0.05026	-0.09846	0.03916	0.07103	0.02601	0.03952	-0.01492	0.01017	0.10166	-0.51479	1.00000
SLGF	-0.12318	0.19807	-0.08508	0.33440	-0.05707	0.22898	0.01476	0.06843	-0.01314	0.11262	0.16413	0.00321
NAVRESRK	0.14335	-0.23373	0.00822	0.06603	-0.03619	0.07857	-0.16836	-0.11771	-0.04195	-0.03872	0.08623	0.01023
SPREDRNK	-0.19342	0.12238	0.09903	-0.00658	0.01641	0.08458	0.13301	0.02039	0.01987	-0.13500	-0.03804	0.02313
SATTR	0.00965	0.10398	-0.12336	0.10320	-0.10456	0.09396	0.11322	-0.08056	-0.00132	0.03054	0.05438	0.14317

	SLGF	NAVRESRK	SPREDRNK	SATTR
SDESIG	-0.12318	0.14335	-0.19342	0.00965
SRANK	0.19807	-0.23373	0.12238	0.10398
SCORD	-0.08508	0.00822	0.09903	-0.12336
SAPT	0.33440	0.06603	-0.00658	0.10320
SLEAD	-0.05707	-0.03619	0.01641	-0.10456
SPHYTPG	0.22898	0.07857	0.08458	0.09396
SCLSTDG	0.01476	-0.16836	0.13301	0.11322
SEXENL	0.06843	-0.11771	0.02039	-0.08056
SPRCOLL	-0.01314	-0.04195	0.01987	-0.00132
SEXTRA	0.11262	-0.03872	-0.13500	0.03054
SVARS	0.16413	0.08623	-0.03804	0.05438
SNVARS	0.00321	0.01023	0.02313	0.14317
SLGF	1.00000	0.07762	0.18619	0.09750
NAVRESRK	0.07762	1.00000	-0.10133	0.00093
SPREDRNK	0.18619	-0.10133	1.00000	0.51858
SATTR	0.09750	0.00093	0.51858	1.00000

*SRANK is defined as Rank attained on Active Duty. NAVRESRK not included in SRANK.

APPENDIX G

Variable Labels and Definitions

SDESIG - Navy officer code which indicates warfare specialty or other specialty. (1110 - surface warfare officer, 1120 - submariner, 3100 - supply corps officer, etc.)

SMILSCH - Military schools attended that were not specifically required by warfare specialty. (examples are Naval War College, Armed Forces Staff College, etc.)

SADED - Formal education above college level even if no advanced degree was awarded. There was no differentiation between masters, doctorate, engineer, etc.

SRANK - Terminal active duty rank or current rank held.

SCOND - Relative ranking among peers in conduct. (In accordance with midshipmen regulations)

SAPT - Relative ranking in leadership potential while at the Naval Academy.

SPHYTRG - Relative ranking at the Naval Academy in physical fitness.

SCLSTDG - Final relative standing in the class with all factors considered.

SEXENL - Previous enlisted service in any armed force for any length of time.

SPRCOLL - Prior college attendance from one to four years.

SEXTRA - Activities other than athletics in which the subject participated during college.

SVARS - Varsity level participation in any sport while at the Naval Academy.

SNVARS - Not a varsity athlete but ability recognized in the 1950 yearbook the "Lucky Bag."

SLCF - Author's perception of the person's potential after looking at his photograph and reading a biographical sketch.

NAVRESRK - Rank attained in the Naval Reserves is recorded only if it is above the terminal active duty rank.

SPREDRNK - The highest rank predicted for the subject by judges after being shown the subject's photograph.

SATTR - The physical attractiveness of the subject assigned by judges on a Likert type scale after viewing the subject's photograph.

APPENDIX H

Columnar Placement of Variables

VARIABLE	FORMAT	RECORD	COLUMNS
SDESIG	F 4. 0	1	12- 15
SMILSCH	F 2. 0	1	17- 18
SADED	F 2. 0	1	20- 21
SRANK	F 2. 0	1	23- 24
SCOND	F 4. 2	1	26- 29
SAPT	F 4. 2	1	31- 34
SLEAD	F 4. 2	1	36- 39
SPHYTRG	F 4. 2	1	41- 44
SCLSTDG	F 4. 2	1	46- 49
SEXENL	F 2. 0	1	51- 52
SPRCOLL	F 2. 0	1	54- 55
SEXTRA	F 2. 0	1	57- 58
SVARS	F 2. 0	1	60- 61
SNVARS	F 2. 0	1	63- 64
SLGF	F 2. 0	1	66- 67
NAVRESRK	F 2. 0	1	69- 70
SPREDRNK	F 3. 2	1	72- 74
SATTR	F 3. 2	1	76- 78

APPENDIX I

HISTORICAL DATA SUMMARY

00120	0601	1110	01	01	07	7308	6512	6975	0274	4066	00	00	01	01	00	01	00	482	300
00140	0602	1510	01	01	05	3863	7554	5108	9479	3068	00	01	00	01	00	00	00	582	341
00160	0603	2100	00	00	04	5701	4124	6382	3661	4587	00	00	00	01	00	01	04	491	225
00180	0604	1110	00	00	03	6526	7149	3342	8769	6642	00	01	00	00	00	01	00	645	358
00100	0605	1110	00	00	02	2757	1403	2952	1562	4471	01	01	01	01	00	00	00	564	333
00120	0606	1310	01	00	04	9536	2908	7206	7438	7612	00	00	00	00	01	00	00	491	250
00140	0607	1110	00	00	02	5701	8364	3849	5455	7496	01	01	00	00	01	01	00	491	275
00160	0608	1310	01	00	06	6526	6512	6164	4558	3068	00	00	00	00	01	00	00	536	250
00180	0609	1110	00	00	02	0390	4949	3256	8234	3256	01	00	00	00	01	01	00	509	258
00200	0610	1110	01	01	05	5701	1041	8885	3241	6628	01	00	00	00	00	00	00	527	241
00220	0611	1110	00	00	03	7308	1041	6975	3892	6439	01	00	01	00	01	00	00	464	225
00240	0612	2100	00	00	03	9985	2127	9204	4283	8277	01	01	00	00	00	00	00	491	258
00260	0613	1110	00	00	03	0477	2127	5050	4283	2272	01	01	00	00	01	01	00	436	225
00280	0614	1110	00	01	04	7308	7554	9204	6164	7727	00	01	00	00	01	00	00	491	358
00300	0615	1110	00	00	03	0072	7554	2474	5137	2335	01	00	00	00	00	01	00	482	300
00320	0616	1110	01	01	06	2720	3342	8234	8234	9696	01	00	01	01	00	01	00	482	300
00340	0617	1120	01	01	06	9536	5817	9696	3661	7756	01	01	00	00	00	01	00	555	266
00360	0618	1110	00	00	03	5701	7149	3096	8769	1519	00	00	00	01	00	01	06	518	333
00380	0619	1310	01	00	05	2257	8017	3994	4283	6497	00	01	00	00	01	01	00	527	316
00400	0620	1700	01	01	06	8929	7149	9363	7438	8885	00	01	00	00	01	01	00	564	308
00420	0621	3100	00	00	03	4891	0868	1794	3921	1432	00	01	00	01	00	00	00	473	341
00440	0622	1110	00	00	03	8929	4124	3673	4558	5238	00	01	00	00	01	01	00	609	341
00460	0623	1310	01	01	06	4891	5817	7496	2170	8856	01	00	00	00	00	01	00	573	275
00480	0624	1110	00	00	02	7308	8017	7264	5137	5861	00	00	01	00	00	00	00	482	250
00500	0625	1110	00	00	06	0665	2908	9030	9768	8263	00	00	00	00	01	00	00	445	266
00520	0626	1110	01	01	06	7308	7149	9450	2706	7655	01	01	00	00	01	01	00	591	358
00540	0627	1400	00	01	05	6526	5817	7076	0028	7901	00	01	01	00	01	00	00	427	241
00560	0628	1110	00	00	05	3863	4124	5687	7221	1316	00	00	00	01	00	01	00	555	333
00580	0629	1310	01	01	06	4934	9406	6671	7988	9305	01	00	00	01	00	01	00	545	366
00600	0630	1110	00	00	04	9985	2127	4587	0591	0043	00	00	01	00	01	01	00	582	275
00620	0631	1120	00	00	05	0072	7149	1432	9189	0477	00	00	00	00	01	01	00	500	250
00640	0632	1110	00	00	03	9985	3342	3024	9927	9247	00	00	01	01	00	00	00	518	316
00660	0633	1310	00	01	06	4298	8639	5108	8552	4232	00	00	00	01	00	01	00	509	308
00680	0634	1110	01	01	06	8929	8639	5846	6164	6739	00	00	00	01	00	01	00	518	275
00700	0635	1400	00	01	04	4298	1403	4515	1562	5354	00	00	01	00	01	01	00	600	366
00720	0636	3100	00	00	03	1678	2908	8422	6164	3936	00	01	00	00	00	01	00	455	241
00740	0637	1110	00	01	06	5701	1041	6536	0853	2460	00	00	00	00	00	00	00	518	333
00760	0638	3100	00	00	02	0810	0868	1649	2170	0274	00	00	00	00	00	00	00	455	266
00780	0639	1110	00	00	03	6526	4949	3849	1302	1823	00	01	00	00	00	00	00	455	233
00800	0640	1110	01	01	06	7303	1403	7496	3661	4688	00	01	00	00	00	00	00	536	250
00820	0641	1110	01	01	06	5701	1041	3668	6164	4963	00	00	00	01	00	01	00	627	316
00840	0642	1110	00	00	02	9985	1403	2474	0184	5904	00	01	01	00	00	00	00	427	175
00860	0643	1310	00	00	05	3299	7554	5687	9869	4196	00	01	01	01	00	01	00	436	250
00880	0644	1110	01	00	03	2720	4124	5282	5774	1172	01	00	01	00	01	00	05	491	375
00900	0645	1110	00	00	03	8176	4949	6584	6164	5774	00	01	00	00	00	01	04	482	183
00920	0646	1110	00	00	03	8176	4124	0767	0390	6410	00	00	00	00	00	01	00	591	333
00940	0647	1110	00	00	03	6526	5817	6975	4283	3053	00	01	00	01	00	01	06	427	183
00960	0648	1310	01	00	04	4891	2908	2373	8029	4992	00	00	01	01	00	01	00	545	250
00980	0649	1110	00	01	06	1953	1041	9811	6555	6092	01	01	00	00	00	01	00	655	375
01000	0650	1310	01	00	05	8176	8017	5600	6164	6237	00	01	00	00	00	01	00	473	241
01020	0651	1310	00	01	06	3299	5817	4587	6989	2532	00	01	00	00	01	01	00	491	333
01040	0652	1310	00	00	02	0969	7149	6020	4804	3777	00	01	01	00	01	00	00	473	233
01060	0653	1310	00	00	05	2257	5817	6946	4283	6280	01	01	01	01	00	01	00	518	308
01080	0654	1110	00	01	06	9536	4949	8451	0998	5166	00	01	00	00	01	01	00	518	291
01100	0655	1110	00	00	02	9536	9985	9580	9479	9710	00	00	00	00	00	01	00	464	291
01120	0656	3100	00	00	03	8176	7149	8422	0853	7076	00	00	00	00	00	00	00	436	350
01140	0657	1400	01	01	06	4891	5817	5918	3892	8306	00	00	00	00	00	01	00	536	300
01160	0658	1120	00	00	04	3863	4124	1649	4804	1997	00	00	00	01	00	01	00	373	250
01180	0659	1310	01	01	05	5701	5817	3256	2170	3125	01	00	01	00	01	01	00	473	350
01200	0660	1110	00	00	06	7308	8017	8827	7438	4254	00	00	01	01	00	01	00	445	191
01220	0661	1630	01	00	04	8176	9117	6382	6164	8408	00	01	00	00	01	01	00	486	286
01240	0662	1110	00	00	05	3863	4124	5846	1562	1070	00	00	00	00	01	01	00	473	275
01260	0663	1310	01	01	04	4248	4949	6526	7988	5499	00	00	00	00	01	00	00	518	258
01280	0664	1310	01	01	05	3299	9117	3704	2706	3806	00	01	01	00	00	01	00	445	225
01300	0665	1400	00	01	05	2257	8639	3986	7438	9044	00	00	00	00	01	00	00	491	316
01320	0666	1110	00	00	05	4298	7149	1331	7438	0839	00	00	00	00	01	01	00	509	275
01340	0667	1400	00	01	05	8176	3364	9739	4558	9189	00	00	01	00	01	01	00	536	325
01360	0668	1310	00	00	02	1461	3342	6150	6989	3719	01	00	01	00	01	01	00	436	208
01380	0669	1310	00	00	05	1678	7554	6526	1966	7785	00	00	01	00	01	01	00	491	300
01400	0670	1110	00	00	02	7308	7149	7496	7221	6382	00	00	01	00	00	01	00	518	325
01420	0671	1400	00	01	05	8929	5817	9725	2981	7843	01	00	01	00	00	01	00	482	233
01440	0672	1310	01	01	05	8176	4949	3675	6164	4370	01	00	01	00	00	01	00	464	233
01460	0673	1120	00	00	04	6555	2127	6382	2170	2850	01	00	01	00	01	01	00	555	225
01480	0674	1110	00	00	05	4298	4949	7713	7438	4109	00	00	01	00	01	01	00	536	308
01500	0675	1310	01	01	06	4891	4949	7376	7439	3386	01	00	00	01	00	01	00	445	216
01520	0676	1110	00	00	03	3299	1693	0955	7221	0405	01	00	01	01	00	01	00	518	275
01540	0677	1110	00	01	06	6526	2908	5600	1866	7308	01	00	00	00	00	00	00	573	341
01560	0678	1510	00	01	06	3863	8364	7264	8234	9290	00	01	01	01	00	01	00	473	233
01580	0679	1120	01	00	04	3299	2908	1505	9869	6613	00	01	01	01	00	01	00	527	383
01600	0680	1310	00	00	03	4891	6512	8002	5455	8292	00	00	01	00	01	01	00	527	333
01620	0681	1310	01	00	06	7308	8797	5050	8769	9117	00	01	01	00	01	01	00	500	350
01640	0682	1310	00	01	05	1461	4124	0274	4804	5716	01	01	01	01	00	01	00	454	258
01660	0683	1310	00	00	03	5701	9406	6975	9189	7366	01	00	01	00	01	01	00	582	316
01680	0684	1110	00	00	03	1953	2387	1794	0593	1230	01	01	01	00	01	01	00	500	333
01700	0685	1310	00	00	03	0115	4124	1823	7221	1707	00	00	01	00	01	01	05	491	400
01720	0686	1310	00	00	01	5526	5817	9363	3661	7800	01	00	01	00	00	01	00	509	233
01740	0687	1110	00	00	02	0549	2908	0694	9985	4819	00	00	01	01	00	01	00	618	333
01760	0688	1510	01	01	06	9985	9117	3198	8552	7149	00	01	01	01	00	01	00	573	391
01780	0689	1120	00	01	05	8929	1693	9204	9189	8538	01	00	01	00	01	01	00	409	266
01800	0690	3100	00	01	05	4891	8639	4124	7221	6599	00	00	01	01	00	01	00	500	341
01820	0691	1110	01	00	06	3299	7149	8104	3892	5123	00	00	01	01	00	01	00	436	358
01840	0692	2100	00	00	03	9536	9580	8060	5774	9594	00	00	01	00	01	01	05	500	300
01860	0693	1610	01	01	06	6526	6512	6020	4558	4052	01	00	01	00	00	01	00	536	258
01880	0694	1110	00	01	04	0072	0303	3560	6164	6078	01	01	01	00	01	01	00	482	308
01900	0695	1110	01	00	04	7308	0405	7713	0998	7554	01	00	01	00	00	00	00	482	241
01920	0696	1110	00	00	03	4238	1403	8002	0390	7467	01	00	01	00	01	01	00	518	350
01940	0697	1310	00	00	03	8176	8017	3994	8437	6555	01	00	00	01	00	01	00	491	225
01960	0698	1310	00	00	03	7308	7149	6975	1866	4978	00	00	01	01	00	01	00	518	308
01980	0699	1310	00	00	03	5701	1403	3560	3892	2083	00	00	01	01	00	00	00	400	233
02000	0700	1110	00	00	02	4891	0405	2952	0127	4544	01	00	01	00	00	00	00	445	291

APPENDIX J

Pearson Correlation Matrix of Predictor Variables

	SRANK	SCOND	SAPT	SLEAD	SPHYTRG	SCLSTDG	SPREDRNK	SATTR
SRANK	1.000	0.0840	0.1882	0.2854	0.0729	0.1626	0.1224	0.1040
SCOND	0.0840	1.0000	0.1686	0.3396	-0.1569	0.3913	0.0992	-0.1233
SAPT	0.1882	0.1686	1.0000	0.1646	0.3305	0.3044	-0.0063	0.1033
SLEAD	0.2854	0.3396	0.1646	1.0000	-0.0469	0.5364	0.0167	-0.1044
SPHYTRG	0.0729	-0.1569	0.3305	-0.0469	1.000	0.1452	0.0848	0.0940
SCLSTDG	0.1626	0.3913	0.3044	0.5364	0.1452	1.0000	0.1332	0.1133
SPREDRNK	0.1224	0.0992	-0.0063	0.0167	0.0848	0.1332	1.0000	0.5187
SATTR	0.1040	-0.1233	0.1033	-0.1044	0.0940	0.1133	0.5187	1.0000

Sample Size = 100

$p < .05$ for $r \geq /.20/$

$p < .01$ for $r \geq /.25/$

$p < .001$ for $r \geq /.30/$

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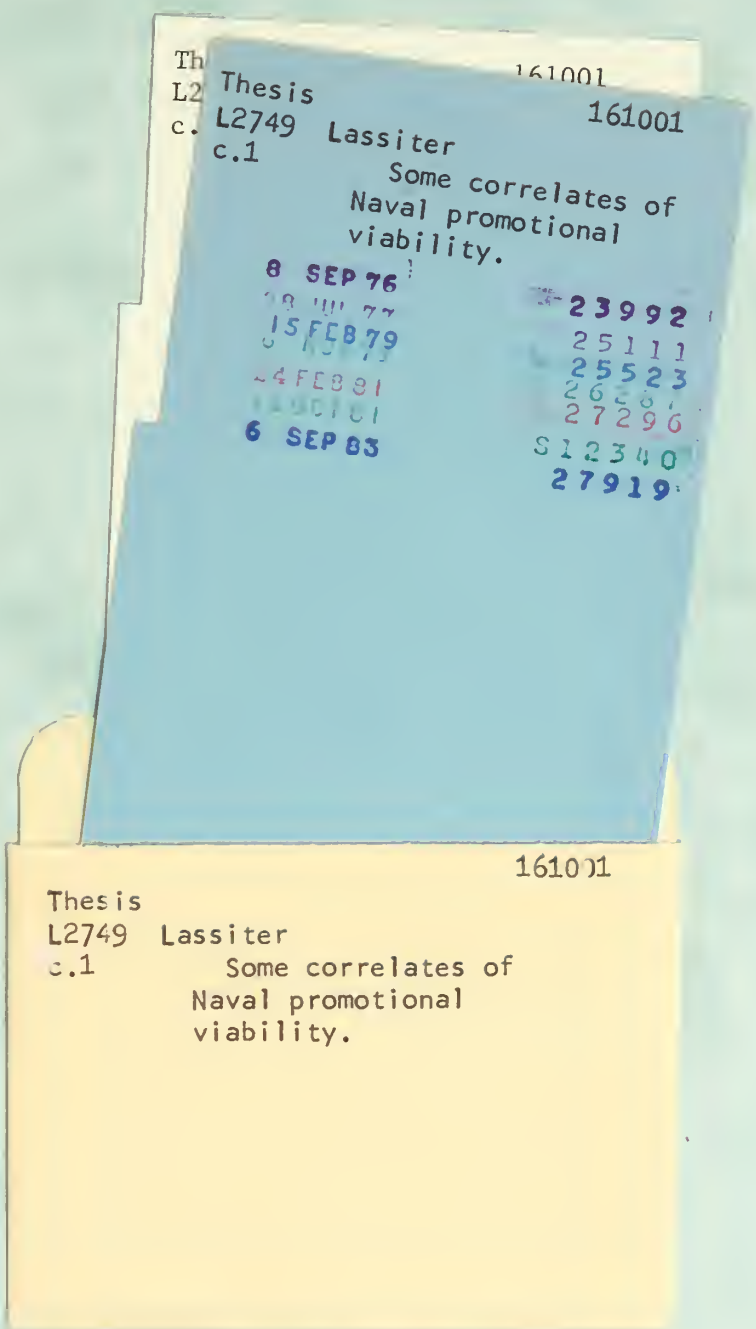
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